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to secure the coveted prey. I have often seen these birds dart down *into the grass* from those heights and seize an insect with such precision that it must have been plainly visible from where the start was made. This would indicate that they possess a faculty of sight, developed by ages of practice, altogether above that of the human race, and most useful in their struggle for existence. But the late Robert Kennicott (quoted by Baird, Brewer and Ridgway in their great work on the Birds of North America) states that a pair of wrens will capture 1000 insects per day during the breeding season, and this fact of itself would indicate the sharpest vision and wonderful celerity of movement.—*Charles Aldrich, Webster City, Iowa, June 1st, 1886.*

#### ANTHROPOLOGY.<sup>1</sup>

THE DAVENPORT ACADEMY has just issued Vol. IV of its Proceedings, nearly the whole of which is occupied with anthropology. The papers of Dr. Hoffman and Mr. Holmes have been some months in print and have been previously noticed. An appendix of nearly one hundred pages is by the president of the academy, and entitled "Elephant pipes and inscribed tablets in the museum of the Academy of Natural Sciences, Davenport, Iowa." The contents of this appendix may be tabulated as follows:

1. A defence of the separate nationality of the Mound-builders against the theory of their identity with modern Indians.
2. A defence of the genuineness of the three inscribed tablets and two elephant pipes in the museum of the Academy, especially against the statements of Mr. Henshaw in his paper published in the second annual report of the Bureau of Ethnology and the endorsement of the director of the bureau.
3. An argument against centralization of ethnological work in the Smithsonian Institution and the Bureau of Ethnology.
4. A series of letters from friends of the Davenport Academy in sympathy with a former vindication.
5. Extracts from scientific journals in relation to the same subject.

Whether the Mound-builders were succeeded in the Mississippi valley by their immediate descendants, the Indians living there when the whites made their appearance three centuries and more ago, is an open question, though some archæologists have declared the argument closed. Dr. Carr, Dr. Brinton, the director and the archæologist of the Bureau of Ethnology, and many others are in favor of the identity. Squier and Davis, President Putnam and many other eminent archæologists hold the contrary view, maintaining that the Mound-builders exhibited traits of civilization which set them far above their modern successors on the same soil. The appendix to the Davenport Proceedings is an able summary of the arguments in favor of the higher civilization of the Mound-builders. It seems to us that a comprehensive review of what can be said for and against this theory by some judicial mind would be exceedingly timely.

<sup>1</sup> Edited by Prof. OTIS T. MASON, National Museum, Washington, D. C.

Upon the second point we can throw no additional light. The Davenport Academy is one of the most thriving State associations for research and collection of material. In some particulars the museum vies even with that of the Smithsonian Institution. There are in all this vast treasure five objects which run the whole gamut of reputation, from that of base fraud to the highest credibility. President Putnam gives the history of their acquisition as follows :

- a. The discovery of two inscribed tablets in Mound 3, on Cook's farm, near Davenport, by Jacob Gass, L. H. Willrodt and H. S. Stolzenau, with five other persons, Jan. 10, 1877.
- b. The discovery of another tablet, Jan. 30, 1878, in Mound 11, on Cook's farm, by Jacob Gass, John Hume and Charles E. Harrison.
- c. The discovery, in March, 1880, of an elephant pipe in a mound on Hass' farm, in Louisa county, Iowa, by A. Blumer, Jacob Gass and F. Hass.
- d. The obtaining of an elephant pipe by Jacob Gass from a farmer in Louisa county, Iowa, who found it on his farm while planting corn.

In reply to the assertion that these pieces are not genuine, Mr. Putnam enters the most eloquent protest, backed up by Farquharson, Pratt and J. D. Putnam, who were familiar both with the finders and the finds. President Putnam commits himself to belief in the contemporaneity of man and the mastodon in America, invoking the testimony of Koch, Dickson, Pourtales, Dowler, Winslow, Whitney, Cleu, Hilgard and Fontaine. This contemporaneity is again a subject open to discussion, and no doubt it will receive the attention which it deserves.

The third part of President Putnam's argument, in which the Smithsonian Institution and the Bureau of Ethnology are held to be antagonistic to local societies of our country, ought to have been omitted. Ninety-one pages of the volume containing Mr. Putnam's argument were contributed by Dr. Hoffmann and Mr. Holmes of the Bureau of Ethnology. On page iv it is distinctly stated that Dr. Hoffman and the Bureau of Ethnology furnished all the illustrations for these papers without expense to the academy. On p. 245 we are told that "the special thanks of the academy were tendered to Major Powell for his courtesy in lecturing, free of charge, for its benefit."

The writer of this note, long before his connection with the National Museum, was familiar with the intense desire of Professor Baird to foster local scientific organizations. He also, at Major Powell's request, sat for several days on a commission to nominate anthropological societies and students throughout the world to receive all the publications of his bureau, in order to place them where they would do the most good. It would be an irreparable loss to anthropological science if by any means this bureau should be disestablished before Powell, Pilling, Mallery, Thomas, Henshaw, Dorsey, Gatschet, Cushing, the Mindeleffs, Hoffman, Yarrow, Boas, Murdoch shall have finished the

great work which each has undertaken, and any one of which would be far too burdensome for any scientific association in America to carry.

VOCABULARY OF ARCHERY.—In a former number of the NATURALIST Mr. John Murdoch kindly furnished us with a vocabulary of the harpoon. We give below a vocabulary of archery, hoping that all who are in sympathy with us in establishing accurate nomenclature for the various branches of anthropology will aid in adopting these terms, or at least will state their objections if they have any. No claim whatever is made to originality in most of the terms. Dr. John Evans, the *Encyclopædia Britannica*, Professor Morse, Mr. Murdoch, Hansard and others have been freely consulted. The list of words given below includes the bow, the arrow and the arrow-maker's outfit. No discrimination is made between ancient and modern archery, as it is designed to include the whole life-history of this species of human activity in the same manner that a zoölogist would monograph species of animals:

ARCHER, old French *archier*, Latin *arcarius*, from *arcus*, a bow, one who shoots with a bow; whence archery, shooting with the bow.

ARM-GUARD. The Japanese, in releasing, revolve the bow in the left hand; a guard is worn on the outer side of the forearm to catch the blow of the string.

ARROW, a missile shot from a bow. The possible parts are the head, barb-piece, foreshaft, shaft or stele, feathering,nock, and seizings.

ARROW CEMENT, substance used in fastening the arrow-head to the shaft. A few tribes use glue or cement in making the sinew-backed bow.

ARROW-HEAD, the part of an arrow designed to produce a wound. The parts of the primitive stone arrow-head are the tip or apex, faces, sides, base, shank or tang, and facets.

ARROW-STRAIGHTENER, a piece of bone, wood or ivory with a perforation to serve as a wrench in straightening arrow-shafts, barbs, etc.

BACK (side), the part of the bow away from the archer.

BACKED, a bow is backed when along the outside are fastened strips of wood, sinew or cord to increase the elasticity.

BALDRIC, the strap supporting a quiver or sheath, being worn over one shoulder, across the breast and under the opposite arm; generally much ornamented.

BARB-PIECE, the piece of ivory, &c., on some arrows attached to the true head and having barbs on the sides. This should be carefully discriminated from the foreshaft, which has another function altogether.

BASE of an arrow-head, the portion which fits into the shaft.

BELLY (inside), the part of a bow toward the archer, usually rounded.

BOW, an elastic weapon for casting an arrow from a string. (See self-bow, compound bow, backed bow, grafted bow.)

BOW-CASE, a long bag of wood, leather or cloth, in which the bow is kept when not in use.

BOW-STAVE, the bow in a rough state. Bow-staves were an important item of commerce prior to the use of gunpowder.

BOW-SHOT, the distance to which an arrow flies from a bow.

BOWSTRING, the string used in discharging a bow. The substances used, the method of treatment and of nocking are important to notice.

BOW-WOOD, the substances used for bows, generally wood, but horn, antler, bone and metal have been employed.

**BOWYER**, a maker of bows.

**BRACER** (wrist-guard), a contrivance for protecting the archer's wrist from being galled by his bowstring.

**BRACING** (stringing), bending the bow and putting the eye of the string in the upper nock preparatory to shooting. The different methods of bracing throughout the world form an interesting study.

**BUTTS**, pyramidal banks of earth used formerly for targets.

**BUTT-SHAFT**, a blunt arrow for shooting at a butt, the ancient style of target.

**CHIPPER**, the pointed implement of bone, antler, &c., used for shaping flint arrow-heads, spear-heads, &c.

**COCK-FEATHER**, that feather of an arrow which is uppermost when the bow is drawn.

**COMPOUND BOW**, made of two or more pieces of wood, bone, horn, antler, lashed or riveted together.

**EYE**, the loop of a bowstring which passes over the upper nock in bracing.

**FACES**, the broad, flattened portions of an arrow-head.

**FACETS**, the little surfaces left by chipping out a stone arrow-head.

**FEATHERING**, the strips of feather at the butt of an arrow, including the method of seizing or fastening.

**FLAKING HAMMER**, called also hammer stone, a stone used for knocking off flakes in making flint arrow-heads, &c.

**FLETCHER**, an arrow-maker, akin to *fleche*.

**FOOTING**, a piece of wood inserted in the shaftment of an arrow at the nock.

**FORESHAFT**, a piece of hard wood, bone, ivory, antler, &c., at the front end of an arrow to give weight and to serve for the attachment of the head.

**GRAFTED BOW**, a species of compound bow formed of two pieces joined together at the handle.

**GRIP**, the part of a bow grasped in the hand. The same term should be applied to the corresponding part of swords, daggers, &c., where it is differentiated in any manner.

**GUARD** (wrist-guard), a shield of leather or other substance fastened to the wrist of the left hand to prevent injury from the bowstring (see bracer).

**HORN**, the end of a bow when made of horn.

**LIMBS**, the part of a bow above and below the handle or grip.

**NOCK**, properly the notch in the horn of a bow, but applied also to the whole of that part on which the string is fastened. Upper nock, the one held upward in bracing. Lower nock, the one on the ground in bracing. Also the notch in the end of an arrow.

**NOCKING**, placing the arrow on the string preparatory to shooting.

**NOCKING-POINT**, that place on a bowstring where the nock of the arrow is to be fitted, often whipped with silk.

**NOOSE**, the end of a string which occupies the lower horn of a bow.

**OVER-ARROWS**, those shot directly over the center of the mark and beyond the target.

**OVERHAND**, shooting overhand is to shoot at the mark over the bow-hand, when the head of the arrow is drawn inside the bow.

**PACKING**, of leather, fish-skin or other soft substance used in binding the nocks and the grip of bows.

**PILE**, the head of an archery arrow; any arrow-head may bear the same name, in which we may have a one-pile, two-pile, three-pile arrow, &c.

**PITCHING-TOOL**, or knapping-tool, a column of antler or other hard substance used between the hammer and the core in knocking off flakes of stone.

RELEASE, letting go the bowstring in shooting. Professor E. S. Morse characterizes the various releases as follows :

1. Primary release, thumb and first joint of forefinger pinching the arrow nock.
2. Secondary, thumb and second joint of forefinger, middle finger also on string.
3. Tertiary, thumb and three fingers on the string.
4. Mediterranean, fore and middle finger, thumb not used.
5. Mongolian, thumb on string, with or without thumb-ring.

RIBAND, a term applied to the stripes painted on arrow-shafts, generally around the shaftment. These ribands have been called clan-marks, owner-marks, game tallies, etc.

SEFIN (see thumb-ring).

SELF-BOW (simple), made of a single piece of wood or other material.

SHAFT, anciently an arrow, but strictly the portion behind the head, and in a fore-shafted arrow the lighter portion behind the foreshaft.

SHAFT-GROOVES, furrow cuts along an arrow-shaft from the head backward ; they have been called blood-grooves and lightning-grooves, but these names are objectionable as involving theories.

SHAFTMENT, the part of an arrow on which the feathering is laid.

SHANK, the part of an arrow-head corresponding to the tang of the sword-blade.

SHORT-ARROWS, those which fall short of the mark.

SIDES, of an arrow-head, the sharpened portions between the apex and the base, also called the edges.

SINEW-BACKED BOW, one whose elasticity is increased by the use of sinew along the back, either in a cable of twine, as among the Eskimos, or laid on solid by means of glue, as with many tribes in Western United States.

SLEIGHT, the facility with which an archer releases his bowstring.

STELE (stale, shaft), the wooden part of an arrow, an arrow without feather or head.

TARGET, a disk of straw covered with canvas, on which are painted concentric rings, used in archery as a mark in lieu of the ancient butt.

THUMB-RING, a ring worn on the thumb in archery by those peoples that use the Mongolian release ; called sefin by the Persians.

TIP, a term applied to the sharp apex of an arrow-head.

TRAJECTORY, the curve which an arrow describes in space, may be flat, high, &c.

WEIGHT, of a bow, the number of pounds required to draw a bow until the arrow may stand between the string and the belly, ascertained by suspending the bow at its grip and drawing with a spring scale.

WHIPPING (seizing, serving), wrapping any part of a bow or arrow with cord or sinew regularly laid on.

WIDE-ARROWS, those shot to the right or the left of the mark.

## MICROSCOPY.<sup>1</sup>

A STAINING DISH.—A convenient form of staining<sup>n</sup> dish has hitherto been a desideratum ; at my request the Educational Supply Co., at 6 Hamilton place, Boston, has undertaken to supply this desideratum. The new dish, shown of the natural size in the cut, is made of clear glass with polished surfaces ; it is sufficiently deep to hold a considerable quantity of fluid, while the curves inside are such that although large sections lie nearly flat, yet

<sup>1</sup> Edited by Dr. C. O. WHITMAN, Mus. Comparative Zoölogy, Cambridge, Mass.